UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,894	12/12/2003	Youichi Ono	03746/LH	2374

1933 7590 12/05/2005		EXAMINER
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC		PHAM, HAI CHI

ART UNIT	PAPER NUMBER
2861	

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DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/734,894	ONO¸ET AL.
	Examiner	Art Unit
	Hai C. Pham	2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,14-24,29-39,44 and 45* is/are rejected.

7)☒ Claim(s) *10-13,25-28 and 40-43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

    1.☒ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
    application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *03/29/04, 11/08/05*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Specification

2.   Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means," "said," and "comprise," should be
avoided. The abstract should describe the disclosure sufficiently to assist readers in
deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

3.   The abstract of the disclosure is objected to because the abstract contains an

improper term, e.g., "comprising" at line 1. Correction is required. See MPEP

§ 608.01(b).

Claim Objections

4.   Claims 31, 35 and 44 are objected to because of the following informalities:

Claim 31:

- The following limitation "A computer program to control a computer to function as an image processor" should read --A computer program to <u>be executed by</u> ~~control~~ a computer to function as an image processor-- since the computer itself cannot perform the function of an exposing device.

<u>Claim 35</u>:

- Similarly, the following limitation "A computer program to control a computer to function as an image processor" should read --A computer program to <u>be executed by</u> ~~control~~ a computer to function as an image processor-- since the computer itself cannot perform the function of an exposing device.

<u>Claim 44</u>:

- The following limitation "A computer program to control a computer to function as an image processor" should read --A computer program to <u>be executed by</u> ~~control~~ a computer to function as an image processor-- since the computer itself cannot perform the function of an exposing device.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 5, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Furuya

(U.S. 6,297,873).

Furuya discloses an image recording apparatus comprising an exposing device

(laser printer section 18) for exposing an image forming material (photographic printing

paper 62 or 63) so as to form a latent image on the image forming material based on

image data, a developing device (processor section 20 carrying out color development)

for developing and visualizing the latent image on the exposed image forming material

so as to form an image, a measuring device (not shown) for measuring the image

density of the image on the developed image forming material (col. 9, lines 44-55), a

calibrating device (e.g., calibration control section 80) for forming a table to define a

relation between an image signal and image density thereof on the basis of plural

different test image data and measured-image densities thereof (col. 9, line 44 to col.

10, line 15), a storing device (calibration history memory 84) for storing a passage-time

film characteristic model that is the change with time of a characteristic of the image

forming material (the calibration history memory 84 storing reference information, e.g.,

calibration history information caused by periodic changes due to the four seasons, or

the actual information of calibrations 1 and 2 such as densities measured from test

pattern formed on the photographic printing paper 62 in different time frames, which

reflects the change in characteristics with time) (Fig. 4) (see also col. 13, lines 45-59),

and a difference calculating device to calculate a density difference on the basis of the

passage-time film characteristic model between the time of forming the table and the

time of forming an image based on image signal of diagnostic image data (computing

processing section 88 computes a correction value based on the amount of change in

characteristic between the reference information of calibrations 1 and 2, the calibration

3 information so as to correct the amount of exposure) (col. 11, lines 26-47) (Fig. 4),

and a correcting device for correcting the table on the basis of the density difference

calculated by the difference calculating device (col. 10, lines 24-39).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1, 4, 6-7, 14, 16, 19, 21-22, 29 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Furuya in view of Terashita et al. (U.S. 5,083,154).

With regard to claims 1 and 4, Furuya discloses all the basic limitations of the

claimed invention but fails to disclose the storing device for storing a characteristic

change model indicating a characteristic change of at least one of the exposing device

and the developing device with time, and the characteristic change model being an

actual characteristic change model obtained based on image densities measured by the

measuring device with the processing of the image forming materials.

With regard to claim 6, Furuya teaches the storing device (84) storing a result

data obtained by exposing to a part of the image forming material with a light quantity

through the table corresponding to a predetermined density at the time of forming a

diagnosis image and measuring a density on the part of the image forming material on which the diagnosis image is formed (col. 9, line 67 to col. 10, lines 4), a first estimation device for calculating and keeping a characteristic change of the image forming material on the basis of the result data (information of calibrations 1 and 2 reflecting the change of the characteristics of the photographic printing paper with time, the past calibrations being actual and estimated calibrations) (col. 9, line 67 to col. 10, line 8), and a second controlling device for controlling [at least one of] the exposing device [and the developing device] on the basis of the first estimation device in such a way as to offset the characteristic change of the image forming material instead of the stored-passage-time film characteristic model (e.g., based on the past estimated calibration information), but again fails to teach a first controlling device for controlling at least one of the exposing device and the developing device in such a way as to offset the characteristic change of the exposing device and the developing device.

Terashita et al. discloses an image forming apparatus comprising a control device for controlling at least one of the exposing section and the developing section so as to offset the characteristic change with time of the exposing section and the developing section by detecting a change in the exposing section as well as that in the developing section with time by actually measuring the density of the paper obtained by developing a reference paper, and storing the respective detected values along with the time in the data control storage unit so as to correct the printing conditions (col. 10, lines 3-47).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the control section for correcting the change of the exposing device and the developing device with time in the device of Furuya as taught by Terashita et al. The motivation for doing so would have been to constantly finish color prints with high quality independent of the change of the exposing device and the developing device due to a change of season or the like as suggested by Terashita et al. at col. 2, lines 18-55.

Furuya further teaches a clearing device (not shown) for clearing off the characteristic change made by the first estimation device at the time of preparation of the table by the calibrating device or at the time of operation of the second controlling device (the calibration history memory 84 stores new information to be used as previous calibration history information every time the actual calibration and the estimated calibration is carried out) (col. 10, lines 8-15).

9.   Claims 2, 8-9, 15, 17, 23-24, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuya in view of Terashita et al., as applied to claims 1, 14, 16, 29 above, and further in view of Fukuda et al. (U.S. 6,624,876).

Furuya, as modified by Terashita et al., discloses all the basic limitations of the claimed invention except for the storing device storing the characteristic change model that starts at the time of the turning-on of the power source, or when an image formation is resumed after a stop of the apparatus for a period of time not shorter than a predetermined time.

Fukuda et al. discloses an image recording apparatus having a calibration operating section (48) for performing a calibration process wherein the densities of the color image printed on the margin of the recording material outside of the image area are measured and compared to the reference densities, the calculated difference of density values are used to determine the correction value for driving the thermal print head (22), the correction value being stored in the correction parameter memory (42d). Fukuda et al. further teaches the calibration process being executed immediately after the power of the printer is turned on or after a predetermined time has elapsed since the power switch is turned on (e.g., after a predetermined time when the printing operation is not performed) (col. 8, lines 16-30).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the timing for the printing device of Furuya to start the generation and the storage of the calibration information when the printing device is powered on or after a predetermined timed when no printing operation is performed as taught by Fukuda et al. The motivation for doing so would have been to select the most logic moment in time in the printing operation when there is a possibility that a significant status change of the printer may occur in the printer for such performance to be started.

10.   Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuya in view of Nakajima et al. (U.S. 6,616,262).

Furuya discloses all the basic limitations of the claimed invention except for the

computer program to be executed by a computer to function as an image processor.

However, it is old and well known in the art to use a computer program having

program codes to perform tasks specific to desired applications. Nakajima et al., for

instance, discloses an image processing apparatus in which a computer program is

implemented to be executed by the CPU (or printer controller 22) of the printer (2) to

perform the task related to specific image processing that includes receiving reference

information calibration such as engine characteristic (211) and calibration data (212)

from an external device such as the server PC (1) (Fig. 13) based on which the

calibration of the printer can be performed.

It would have been obvious at the time the invention was made to a person

having ordinary skill in the art to incorporate the computer program to perform the image

processing function in the device of Furuya as taught by Nakajima et al. The motivation

for doing so would have been to provide the printing system with the advantageous

automation of performing the necessary function of calibration that should be carried out

at critical timings during the course of printing.

11.   Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Furuya in view of Terashita et al., as applied to claims 1 and 16 above, and further in

view of Nakajima et al.

Furuya, as modified by Terashita et al., discloses all the basic limitations of the claimed invention except for the characteristic change model being installed from the outside.

Nakajima et al. discloses an image processing apparatus in which a computer program is implemented to be executed by the CPU (or printer controller 22) of the printer (2) to perform the task related to specific image processing that includes receiving reference information calibration such as engine characteristic (211) and calibration data (212) from an external device such as the server PC (1) (Fig. 13) based on which the calibration of the printer can be performed.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the calibration information stored in an external device to be downloaded into the device of Furuya as taught by Nakajima et al. The motivation for doing so would have been to allow the printing device to retrieve the reference calibration information when needed while constantly updating the calibration information due to the change of the characteristic of the printing device with time.

12.   Claims 31, 33-34, 36-37, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuya in view of Terashita et al. and Nakajima et al.

Furuya in view of Terashita et al. discloses all the basic limitations of the claimed invention (please refer to the above rejection of the related claims in combination with to Terashita et al.) except for the computer program to be executed by a computer to

function as an image processor, and the characteristic change model being installed

from the outside.

However, it is old and well known in the art to use a computer program having

program codes to perform tasks specific to desired applications. Nakajima et al., for

instance, discloses an image processing apparatus in which a computer program is

implemented to be executed by the CPU (or printer controller 22) of the printer (2) to

perform the task related to specific image processing that includes receiving reference

information calibration such as engine characteristic (211) and calibration data (212)

from an external device such as the server PC (1) (Fig. 13) based on which the

calibration of the printer can be performed.

It would have been obvious at the time the invention was made to a person

having ordinary skill in the art to incorporate the computer program to perform the image

processing function in the device of Furuya as well as the provision of the calibration

information being provided from an external device as taught by Nakajima et al. The

motivation for doing so would have been to provide the printing system with the

advantageous automation of performing the necessary function of calibration that

should be carried out at critical timings during the course of printing in relation to

external devices.

13.   Claims 32, 38-39 and 45 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Furuya in view of Terashita et al. and Nakajima et al., as applied to

claims 31 and 44 above, and further in view of Fukuda et al.

Furuya, as modified by Terashita et al. and Nakajima et al., discloses all the basic limitations of the claimed invention except for the storing device storing the characteristic change model that starts at the time of the turning-on of the power source, or when an image formation is resumed after a stop of the apparatus for a period of time not shorter than a predetermined time.

Fukuda et al. discloses an image recording apparatus having a calibration operating section (48) for performing a calibration process wherein the densities of the color image printed on the margin of the recording material outside of the image area are measured and compared to the reference densities, the calculated difference of density values are used to determine the correction value for driving the thermal print head (22), the correction value being stored in the correction parameter memory (42d). Fukuda et al. further teaches the calibration process being executed immediately after the power of the printer is turned on or after a predetermined time has elapsed since the power switch is turned on (e.g., after a predetermined time when the printing operation is not performed) (col. 8, lines 16-30).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the timing for the printing device of Furuya to start the generation and the storage of the calibration information when the printing device is powered on as taught by Fukuda et al. The motivation for doing so would have been to select the most logic moment in time in the printing operation when there is a possibility that a significant status change of the printer may occur in the printer for such performance to be started.

Allowable Subject Matter

14.   Claims 10-13, 25-28 and 40-43 are objected to as being dependent upon a
rejected base claim, but would be allowable if rewritten in independent form including all
of the limitations of the base claim and any intervening claims.

15.   The following is a statement of reasons for the indication of allowable subject
matter: the primary reason for the indication of the allowability of claims 10, 25 and 40
is the inclusion therein, in combination as currently claimed, of the limitations "said
storing device stores a result data obtained by exposing to a part of the image forming
material with a light quantity through the table corresponding to a predetermined density
at the time of forming a diagnosis image and measuring a density on the part of the
image forming material on which the diagnosis image is formed", "a third controlling
device for controlling at least one of the exposing device and the developing device on
the basis of the difference between the result of the density measured on the part of the
image forming material and a predetermined density for comparison during a
predetermined period of time after loading the holder to the apparatus", and "a fourth
controlling device for controlling at least one of the exposing device and the developing
device on the basis of the second estimation device in such a way as to offset the
characteristic change of the image forming material instead of stored passage-time film
characteristic model", which are not found taught by the prior art of record considered
alone or in combination.

Claims 11-13, 26-28 and 41-43 are allowable because they are directly or indirectly dependent from claims 10, 25 and 40 above.

Pertinent Prior Art

16.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Noda (U.S. 6,825,944) discloses a printing control method for a printer, wherein the calibration is performed at timing when there is a possibility that a significant status change of the printer may occur in the printer and the generated correction values are stored in the RAM of the memory section, and wherein the printer determines the timing at which the correction values are generated such as when the power for the printer is turned on.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

HAI PHAM
PRIMARY EXAMINER

December 2, 2005